

orifice had in some way compressed the gauze and prevented the filtration of liquid.

The author thinks that Mikulicz may be correct and urges that care be taken to follow his warning, *i. e.*, that the gauze should come in contact with all the wounded surface and that the exit of the gauze should be large enough for it to perform its function. As to the importance of using a tube in the gauze, we regard this as prudent. In case one wishes to use the gauze to check hæmorrhage the tube is an objection. The author concludes this portion of his paper with the following conclusions :

1. That the only method of drainage which permits evacuation of fluids during the first hours after operation is capillary drainage.
2. That all the drains are rapidly surrounded by adhesions which render extraperitoneal the tissue about them. This is perhaps the reason for their efficacy.

We defer criticism in regard to Dr. Delbet's work until we have the second portion of his paper before us, and while the experiments are open to some question yet they are instructive and exceedingly interesting.

A. H. BUCKMASTER.

BARLING ON CARCINOMA OF THE BLADDER.

In the *Birmingham Medical Review* of March, 1890, Mr. Gilbert Barling presents a study of carcinoma of the bladder based on 74 cases and specimens. He accepts two classes of carcinomas, the squamous-celled, or epithelioma, and the alveolar, the former out-numbering the latter by nearly two to one, the actual numbers being 47 and 27. The epitheliomas are made up of epithelium, the general tendency of which is towards the squamous condition, with marked productions of the cell nests of epidermic globules so characteristic of its growth when it exists in other parts of the body, whilst there is hardly any attempt at the formation of fibrous tissue alveoli. Such growths are doubtless derived from the superficial layers of epithelium, which approximates to the squamous kind.

The alveolar carcinomas differ histologically from the former by their

having, as their name implies, a definite alveolar formation, the walls of which are made up either of fibrous tissue or involuntary muscle fibre, enclosing epithelium varying greatly both in size and shape. The variation in shape may be from spheroidal to columnar and from columnar to squamous with an attempt at formation of cell nests, all these varieties possibly existing in the same growth, but the spheroidal appears to be the usual type of the epithelium.

Epithelioma is most commonly found as an ulcer with a shreddy surface, and with raised, everted and indurated border; sloughing masses not yet completely separated are seen clinging to the surface; or it may exist as a raised patch with shreddy or papillary surface, the thickest part being at the centre, the indurated edge and ulceration being absent. Rarely there may be no distinct tumor, but hard discrete nodules scattered over a limited area of the mucous membrane. Whichever of these conditions prevails the attachment to the mucous membrane is nearly always sessile.

The site involved varies in extent from the size of a florin to the size of the palm of the hand, or the growth may be diffused over almost the entire cavity, but it most commonly comes under observation as a patch about three inches in diameter—that is in fairly advanced cases.

In not a few cases the surface is villous or papillary, the processes being from a quarter to three-quarters of an inch, and so obscuring the condition of the growth as possibly to lead to mistake as to its real nature. Of forty-five cases where this point is alluded to, fourteen are spoken of as villous or papillated, apart from those whose surface was shreddy from partial destruction of the tumor.

In all forms of carcinoma, as indeed in most of the other tumors, though not to the same extent, deposits of phosphates occur on the surface of the growths with some frequency, and occasionally these salts may aggregate into a calculus of considerable size, lying on and partly enveloped by the superficial parts of the tumor. The recognition of these by the sound may cause the co-existence of a growth to be overlooked.

If the bladder be divided into three segments, at least two-thirds of the epitheliomas will be found to have commenced in or to have in-

volved the lowest segment, whilst a few will be found diffused over nearly the whole mucosa, and rarely is the growth limited to the vertex.

Many bladder-carcinomas run their full course without contaminating the glands at all; if infection does occur, it is very tardy. Out of 26 cases of epithelioma, in which complete post-mortems were made, in only three is there mention of extension to neighboring parts, once to the vena cava and twice to the tissues of the pelvis. In eleven cases, only, were secondary deposits found either in the lymphatic glands or in some distant part of the body, but it is curious that in only one instance were glandular and general infections associated. Possibly, however, more careful examinations in the future will show glandular infection to be more frequent, as has been demonstrated in epitnelioma of other parts of the body when attention has been specially directed to this point.

The glands were infected in six cases as follows—three times the lumbar, twice the aortic, once the iliac as well as the aortic, and once the abdominal. General infection occurred also six times, thrice in one or both kidneys, once in the lungs and liver (the lumbar glands being also involved), once in the lung only, and once in the radius only. How long a time elapses before secondary infection occurs after the growths have once started is to some extent conjectural, but it is almost certain that it does not happen until a late period. Symptoms may point to the existence of an epithelioma for two to three years or even longer, and yet a careful *post-mortem* reveals neither glandular nor general contamination. It is equally true that after a few months symptoms only, both forms of secondary invasion may be found, but it is quite certain that a growth may exist and arrive at considerable magnitude without any clinical evidence of its presence, so that it would be misleading to date the origin of all tumors from the commencement of symptoms, and equally misleading to conclude that secondary invasion may occur in a few months.

The average time for the destruction of life by epithelioma of the bladder, when not interfered with by operation, is three years. Males are attacked more frequently than females in the proportion of 5 to 1. The age most commonly affected is from 50 to 60 years.

Alveolar carcinoma as a rule involves a wide area of the bladder walls. The locality most often affected is the base.

Only once is mention made of perforation of the bladder coats by an alveolar carcinoma. Extension of the growths to neighboring parts occurred only three times in fifteen cases where a complete examination was made after death; once this was to the urethra, once to the vesiculæ seminales, and once to the innominate bone. In the same fifteen cases secondary formations were found nine times, that is in 60%, which is a decidedly higher rate than in the epithelioma; moreover, in five of the nine both glandular and systemic infection had occurred. The glands involved were the iliac twice, the mesenteric twice, the sacral once, the lumbar once and the "abdominal" glands once.

The viscera infected were the liver five times, once in association with the peritoneum and once with bones;—the kidney once, and the skin and dura mater once. Without doubt secondary infection occurs earlier in alveolar than in squamous celled carcinoma, for whilst the average duration of life from the commencement of symptoms in the former is probably less than two years, in the squamous formation it is three years; yet we find a higher rate and a more extensive diffusion of secondary invasion in the alveolar growths. As with the epitheliomas so with the alveolar tumors; more of them arise between the ages of 50 and 60 than in any similar period; whilst between the fortieth and seventieth year, sixteen out of nineteen were produced. The liability of the male sex to be attacked rather than the female is as great as in the epitheliomas.

Carcinoma of the bladder gives rise to those dilative and suppurative changes in the kidney so commonly due to anything which interferes with the functions of the organ. I find in 49 cases of carcinoma, when the condition of the kidneys is described, that 33 suffered from hydro- or pyo-nephritis or from both combined. Rarely calculus in the kidney accompanies a tumor in the bladder, but the association is probably an accidental one.

The first, and for some time the only, symptom of carcinoma, may be intermittent painless hæmorrhage, which is quite distinguishable from that produced by papilloma. In 64 cases of carcinoma I find

hæmorrhage to have been present in 55, while in 47 it was the *first* symptom.

The most certain means of differentiating between innocent and malignant tumors is by the use of the cystoscope. The presence of a pedicle in some cases, the delicate papillary tufts even, if the growth be sessile, and, generally, the solitary condition of the tumor, point strongly to papilloma. In the case of a carcinoma, the sessile attachment, the nodular appearance, the puffy œdematous condition of the mucous membrane around, and in some cases ulceration, all help to make up a characteristic picture.

Four cases are detailed in which resection of portions of the bladder for malignant growths have been done by Clarke, Sonnenburg, Antal and Guyon, respectively. From the study of these cases, and the results of experiments on dogs, the author formulates the following conclusions :

1. The hope of cure by excision, of malignant growths in the bladder lies in early diagnosis, before the growth has attained considerable size, before the patient's powers have been sapped by repeated hæmorrhage, and before secondary obstructive changes have taken place in the kidneys, and before secondary growths have occurred.

2. For those rare cases in which the vertex and its neighborhood is the seat of growth, Antal's extra-peritoneal method should be followed, if possible. By it about half the bladder may be removed, but the greater the amount resected, the greater the difficulty in stripping the peritoneum and in subsequently closing the opening. The peritoneum is of considerable thickness here, and is apt to strip up some of the external muscular coat with it, especially if chronic cystitis has existed. The peritoneum is much more easily peeled off when the bladder is full than when it is empty. The edges of the wound in the bladder should be closed as completely as possible by suture, especially at the angles, and the reflected peritoneum must be carefully fixed in apposition to the remnants of the bladder walls. When the resection has been so extensive that the bladder cannot be closed its edges should be stitched to the skin wound, and the bladder cavity closed, later, by plastic operation.

3. When the intra-peritoneal plan has been followed, the peritoneal wound must be carefully closed with Lembert's suture, and the remaining part by ordinary interrupted suture. If this be not possible, the part of the wound outside the peritoneum should be stitched to the abdominal wall.

4. Silk is the best material for suture, and it should carefully exclude the mucous membrane.

RECENT CONTRIBUTIONS TO THE OPERATIVE RELIEF OF INTRACRANIAL CONDITIONS.

1. *Lucas Championnière*.—Trepanation pour hémorrhagie cérébrale; Série de Trépanations pour Accidents Divers. Par le Dr. Just Lucas Championnière, Paris.—*Journal de Médecine et de Chirurgie pratiques*, October, 1889.

2. *Cheyne*.—Case of Abscess of the left Temporo-sphenoidal lobe. Trephining. Recovery. By W. Watson Cheyne, F.R.C.S., London.—*British Medical Journal*, February 1, 1890.

3. *Milligan and Hare*.—Abscess in the Cerebellum. Trephining. Death. By Messrs. W. Milligan and A. W. Hare, Manchester.—*British Medical Journal*, February 1, 1890.

4. *Williamson*.—Multiple Cerebral Abscesses. Trephining. Death. By G. S. Williamson, Newcastle on Tyne.—*British Medical Journal*, February 1, 1890.

5. *Sheen*.—a. Huge Cerebral Abscess of Traumatic Origin. Trephining. Drainage. Death.

b. Brachial Monospasms with Jacksonian Epilepsy. Exploratory Trephining with Negative Results. By Dr. Sheen, Cardiff.—*British Medical Journal*, February 1, 1890.

I. *Dr. Lucas Championnière* reports thirty cases of trephining for the relief of various conditions, without a death or serious wound complication. The wound in the cranial wall left by the trephine does not cause the inconvenience which might be expected and there is no need of any protective appliance subsequently. For this reason he thinks that there is little importance to be attached to the reimplantation of the osseous discs. He makes the further point that in almost all affections of the meninges and of the brain the relaxation and depletion which is caused by the opening of the cranium can act only favorably, which